

REMARKS

Claim 1 is amended. No new matter is added.

Claims 5-8 are cancelled without prejudice or disclaimer.

Claims 1-4 are in the application.

I. Claim Rejection - 35 USC § 112

The rejection of claims 1 and 5 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is traversed. Claim 5 has been cancelled, rendering the rejection as to claim 5 moot.

The Examiner asserts that the phrase "... a total content of Ta carbonitride and Nb carbonitride is in a range of 5 to 8 wt% ..." (underscoring added), is indefinite because it is not clear whether the combined content is 5-8 wt% or if the individual contents are 5-8 wt% respectively. It is Applicant's understanding that the term "total" in combination with the term "and" clearly recites that it is the combined content which is now "in a range of 5 to 7 wt%."

Applicant respectfully requests that the rejection be withdrawn.

II. Claim Rejection - 35 USC § 103

The rejection of claims 1, 3, and 4 under 35 USC § 103(a) as being unpatentable over Sakuragi (JP 2001-020029, "Sakuragi") is traversed.¹

Claim 1 is amended to now recite the structure of

"...a total content of Ta carbonitride and Nb carbonitride is in a
range of 5 to 7 wt%, and
said β t solid solution comprises Nb carbonitride."

¹ The Rejection also rejected claims 5 and 7-8. These claims, 5 and 7-8, have been cancelled thus rendering the rejection as to them moot.

Sakuragi discloses in Example 11, “TaC wt% and NbC 0 wt%”. But, Sakuragi does not disclose the composition feature of “ β t solid solution comprises Nb carbonitride” which is recited in claim 1. Additionally, in Sakuragi there are eight examples which do not include Nb carbonitride, see Examples 1, 4, 5, and 8 through 12. Therefore, amended claim 1 clearly avoids Sakuragi.

Furthermore, with the feature, “...a total content of Ta carbonitride and Nb carbonitride is in a range of 5 to 7 wt% ...” as recited in claim 1, the invention can achieve the new effects as follows,

“In the case in which the content of the aforementioned components is less than 5 wt%, sufficient resistance to adhesion and oxidation resistance cannot be obtained. In the case in which the content of these components is more than 8 wt%, an amount of the TiC component in the β t solid solution becomes relatively small. As a result, sufficient wear resistance cannot be obtained. It is even more preferable to set the total content of TaC and NbC to be in a range of 5 to 7 wt%. By providing this component composition, it is possible to further improve wear resistance under high speed hobbing conditions.” (see PreGrant Publication, paragraph [0026], lines 4-14) (underscoring added).

Since Sakuragi does not teach or suggest these effects, it would not have been obvious to one of ordinary skill in the art to do what Applicant discloses and now positively recites in claim 1.

Clearly, independent claim 1 avoids the Sakuragi and is in condition for allowance. Claims 3 and 4 depend from claim 1 and, therefore, are also in condition for allowance.

Claims 2 and 6 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sakuragi in view of Heinrich et al. (U.S. 7,163,675, “Heinrich”). Applicant respectfully traverses. Claim 6 has been cancelled, rendering the rejection as to it moot. Claim 2 depends from claim 1 and, based on the amendments to and the arguments above regarding claim 1, claim 2 is in condition for allowance.

CONCLUSION

In view of the above, each of the presently pending claim in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment. In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

By

Louis J. DelJuidice

Registration No.: 47.522

DARBY & DARBY P.C.

P.O. Box 770

Church Street Station

New York, New York 10008-0770

(212) 527-7700

(212) 527-7701 (Fax)

Attorneys/Agents For Applicant